

t15_lp_space
(TMTUnXaAmR6gMetSc7k5mapfiXaPFsFv8ew)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $r1_xreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_1 : \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_normsp_1 : \iota \Rightarrow o$ be given. Let $g1_normsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_lp_space : \iota \Rightarrow \iota$ be given. Let $k10_rsspace : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_rsspace : \iota$ be given. Let $k8_rsspace : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_rsspace : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_lp_space : \iota \Rightarrow \iota$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $v5_rlvect_1 : \iota \Rightarrow o$ be given. Let $v6_rlvect_1 : \iota \Rightarrow o$ be given. Let $v7_rlvect_1 : \iota \Rightarrow o$ be given. Let $v8_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_normsp_0 : \iota \Rightarrow o$ be given. Let $v4_normsp_0 : \iota \Rightarrow o$ be given. Let $v2_normsp_1 : \iota \Rightarrow o$ be given. Let $l1_rlvect_1 : \iota \Rightarrow o$ be given. Assume the

following.

$$\begin{aligned}
& \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow ((r1_xxreal_0 np_1 X0) \Rightarrow \\
& ((\neg v2_struct_0 (g1_normsp_1 (k2_lp_space X0) (k10_rsspace k7_rsspace \\
& (k2_lp_space X0)) (k8_rsspace k7_rsspace (k2_lp_space X0)) (k9_rsspace \\
& k7_rsspace (k2_lp_space X0)) (k3_lp_space X0))) \wedge ((v13_algstr_0 \\
& (g1_normsp_1 (k2_lp_space X0) (k10_rsspace k7_rsspace (k2_lp_space \\
& X0)) (k8_rsspace k7_rsspace (k2_lp_space X0)) (k9_rsspace k7_rsspace \\
& (k2_lp_space X0)) (k3_lp_space X0))) \wedge ((v2_rlvect_1 (g1_normsp_1 \\
& (k2_lp_space X0) (k10_rsspace k7_rsspace (k2_lp_space X0)) (k8_rsspace \\
& k7_rsspace (k2_lp_space X0)) (k9_rsspace k7_rsspace (k2_lp_space \\
& X0)) (k3_lp_space X0))) \wedge ((v3_rlvect_1 (g1_normsp_1 (k2_lp_space \\
& X0) (k10_rsspace k7_rsspace (k2_lp_space X0)) (k8_rsspace k7_rsspace \\
& (k2_lp_space X0)) (k9_rsspace k7_rsspace (k2_lp_space X0)) (k3_lp_space \\
& X0))) \wedge ((v4_rlvect_1 (g1_normsp_1 (k2_lp_space X0) (k10_rsspace \\
& k7_rsspace (k2_lp_space X0)) (k8_rsspace k7_rsspace (k2_lp_space \\
& X0)) (k9_rsspace k7_rsspace (k2_lp_space X0)) (k3_lp_space X0))) \wedge \\
& ((v5_rlvect_1 (g1_normsp_1 (k2_lp_space X0) (k10_rsspace k7_rsspace \\
& (k2_lp_space X0)) (k8_rsspace k7_rsspace (k2_lp_space X0)) (k9_rsspace \\
& k7_rsspace (k2_lp_space X0)) (k3_lp_space X0))) \wedge ((v6_rlvect_1 \\
& (g1_normsp_1 (k2_lp_space X0) (k10_rsspace k7_rsspace (k2_lp_space \\
& X0)) (k8_rsspace k7_rsspace (k2_lp_space X0)) (k9_rsspace k7_rsspace \\
& (k2_lp_space X0)) (k3_lp_space X0))) \wedge ((v7_rlvect_1 (g1_normsp_1 \\
& (k2_lp_space X0) (k10_rsspace k7_rsspace (k2_lp_space X0)) (k8_rsspace \\
& k7_rsspace (k2_lp_space X0)) (k9_rsspace k7_rsspace (k2_lp_space \\
& X0)) (k3_lp_space X0))) \wedge ((v8_rlvect_1 (g1_normsp_1 (k2_lp_space \\
& X0) (k10_rsspace k7_rsspace (k2_lp_space X0)) (k8_rsspace k7_rsspace \\
& (k2_lp_space X0)) (k9_rsspace k7_rsspace (k2_lp_space X0)) (k3_lp_space \\
& X0))) \wedge ((l1_rlvect_1 (g1_normsp_1 (k2_lp_space X0) (k10_rsspace \\
& k7_rsspace (k2_lp_space X0)) (k8_rsspace k7_rsspace (k2_lp_space \\
& X0)) (k9_rsspace k7_rsspace (k2_lp_space X0)) (k3_lp_space X0))))))))) \\
& \hspace{15em} (1)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow ((r1_xxreal_0 np_1 X0) \Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1) \wedge (l1_normsp_1 X1)) \Rightarrow ((X1 = g1_normsp_1 \\
& (k2_lp_space X0) (k10_rsspace k7_rsspace (k2_lp_space X0)) (k8_rsspace \\
& k7_rsspace (k2_lp_space X0)) (k9_rsspace k7_rsspace (k2_lp_space \\
& X0)) (k3_lp_space X0)) \Rightarrow ((v4_normsp_0 X1) \wedge ((v3_normsp_0 X1) \wedge \\
& (v2_normsp_1 X1)))))) \\
& \hspace{15em} (2)
\end{aligned}$$

Theorem 1

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow ((r1_xreal_0 np_1 X0) \Rightarrow \\ (\forall X1.((\neg v2_struct_0 X1) \wedge (l1_normsp_1 X1)) \Rightarrow ((X1 = g1_normsp_1 \\ (k2_lp_space X0) (k10_rsspace k7_rsspace (k2_lp_space X0)) (k8_rsspace \\ k7_rsspace (k2_lp_space X0)) (k9_rsspace k7_rsspace (k2_lp_space \\ X0)) (k3_lp_space X0)) \Rightarrow ((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge \\ ((v2_rlvect_1 X1) \wedge (v3_rlvect_1 X1) \wedge (v4_rlvect_1 X1) \wedge (v5_rlvect_1 \\ X1) \wedge (v6_rlvect_1 X1) \wedge (v7_rlvect_1 X1) \wedge (v8_rlvect_1 X1) \wedge \\ ((v3_normsp_0 X1) \wedge (v4_normsp_0 X1) \wedge (v2_normsp_1 X1) \wedge (l1_normsp_1 \\ X1)))))))))))))) \end{aligned}$$